



Notice to Residents and Interested Parties

Preliminary Field Studies - Research to understand the effects of woody vegetation on levees – Pocket Area Levee, Sacramento

Between October 12-November 1, 2009, researchers will be conducting a preliminary field study aimed at determining whether, and under what conditions, trees affect the safety of levees in California's Central Valley. This preliminary study is related to a larger research program of national significance, jointly conducted by the US Army Corps of Engineers (Corps) Engineer Research and Development Center (ERDC), the California Department of Water Resources (DWR), and the Sacramento Area Flood Control Agency (SAFCA). Research studies by California are being led by scientists from the University of California (Davis and Berkeley campuses), the University of Georgia and consultants.

Preliminary studies at the Pocket Area levee involve investigating whether tree roots approach, are stopped by, penetrate or damage a slurry wall; and where tree roots grow/occur in relation to the levee. The Pocket Area effort will allow scientists to test research methods and to obtain some initial data prior to a more comprehensive research effort in 2010. The specific Pocket Area efforts are described in more detail as follows:

Pocket Area Slurry Wall Tree Root Investigation: This investigation will provide an opportunity to determine if tree root growth over the last 18 years has extended into the slurry walls and what effect slurry walls have had on root growth. Of particular interest is evaluating if tree roots were stopped by the slurry wall, forced to grow laterally, or able to penetrate the walls. A series of trench excavations will be made on levee tops adjacent to the slurry wall sites.

Trenches will be dug atop the levee crown with a small backhoe, various hand-operated tools and a vacuum truck. Roots will be mapped and measured and soil data will be characterized for later analysis. All trenching sites will be fully repaired and closed prior to the flood season, but no trees will be removed during this slurry wall study.

Root Architecture Studies: For scientific study purposes, this effort requires excavating and mapping the roots of both one live tree and one decomposing stump. The candidate tree is approximately 12 inches in diameter and is located on the waterside of the levee grouped with several other trees of similar size and girth, approximately 10 feet from the levee toe.

The decomposing stump is approximately 12 inches in diameter, on the landside of the levee, approximately 5 feet below the levee crown. Excavations will involve the use of an air spade, hand tools and a vacuum truck to capture the soil surrounding the tree roots. Roots will be mapped and measured and soil data will be characterized for later analysis.

SAFCA does not anticipate that any of the described work will preclude use and enjoyment of the levee tops for neighborhood or area residents.

Background – Why these studies are necessary

The Levee Vegetation (tree root) research effort being undertaken by SAFCA and the State of California follows closely on the heels of the release of a new US Army Corps of Engineers policy that would prohibit woody vegetation on levees (within a 15-foot buffer zone on either side of the levee) due to a perceived potential for risk to levee reliability, inability to inspect the levee and for flood fighting. The potential result of failure to comply with the policy could mean decertification of levees and the loss of eligibility for federal rehabilitation assistance dollars in the event of flood damage.

Consequently, levee research efforts have emerged through the California Levees Roundtable, a partnership of federal, State, and local agencies formed to address vegetation policy issues affecting the State and federal levee system in the Central Valley. This multi-agency partnership was responsible for preparing California's Central Valley Flood System Improvement Framework in 2009. The *Framework* document provides general guidelines for helping the State, in coordination with federal and local entities, to focus on flood system improvements and public safety in the near term, while a more comprehensive, long-term flood system plan is developed. The document describes implementation and goals of an anticipated research program aimed at contributing peer-reviewed scientific research to support a meaningful and implementable vegetation management policy which more closely aligns itself with Central Valley conditions.

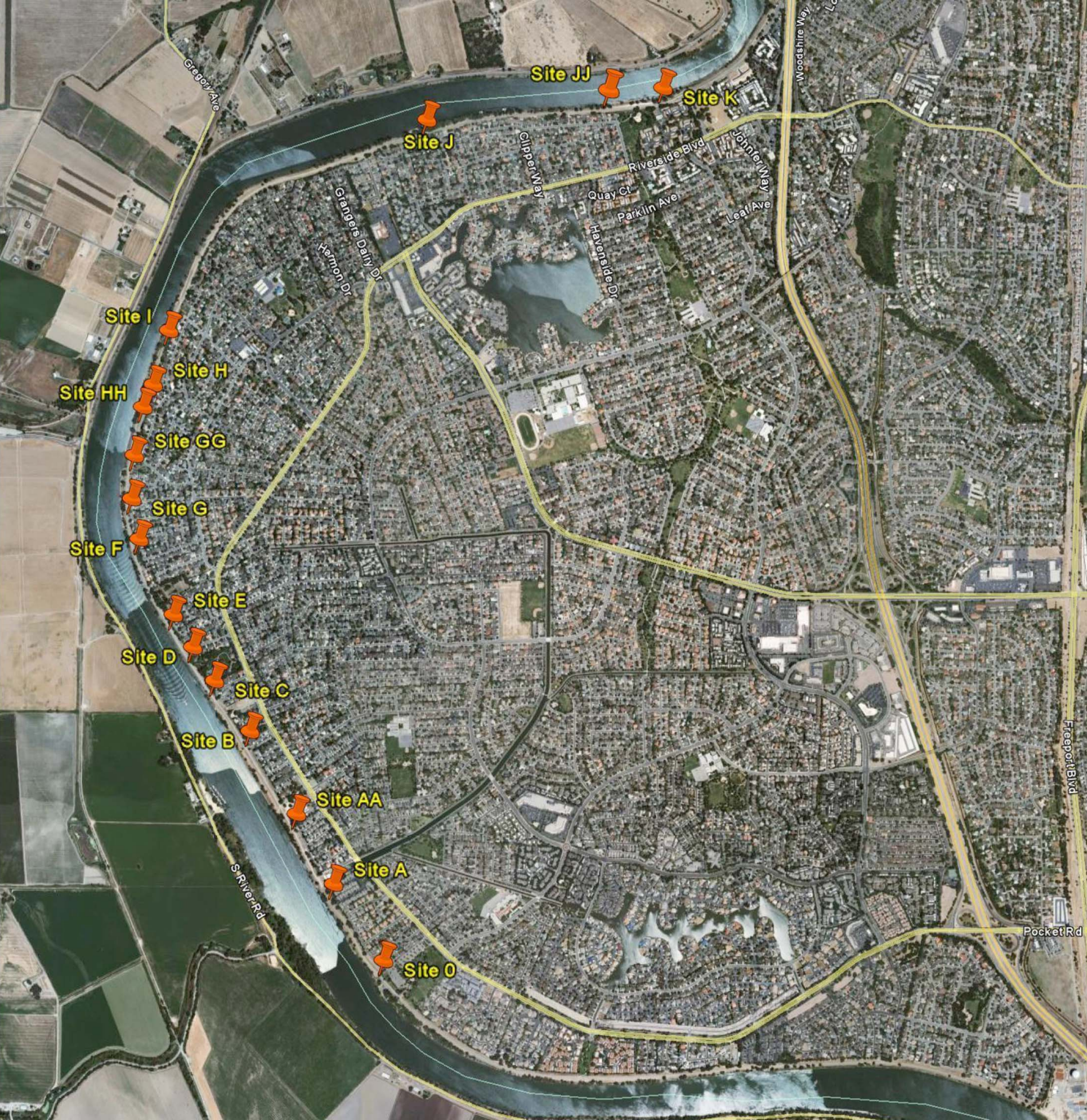
Local and State agencies with responsibility for levee maintenance hope to develop policies which would avoid the removal of existing vegetation that may be benign or even beneficial to levee safety while providing environmental benefits.

More information on the California Levees Roundtable and the *Framework* document can be found at http://recbd.ca.gov/docs/031209flood_improvement.pdf

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Site JJ

Site K

Site J

Site I

Site H

Site HH

Site GG

Site G

Site F

Site E

Site D

Site C

Site B

Site AA

Site A

Site O

Gregory Ave

Granger's Dairy Dr
Hemon Dr

Cliffe Way

Riverside Blvd

Quay Ct
Hayonside Dr

Parkin Ave

Leat Ave

Woodshire Way

Freeport Blvd

Pocket Rd

S River Rd

Pocket Area Slurry Wall Sites for Evaluation of Penetration of Tree Roots

Site JJ (~Levee Mile 2.63) – 1 trench opposite a large oak tree on waterside slope near levee crown about 25 feet from levee centerline – to be used as initial practice site

Site F (~Levee Mile 4.9) – 1 trench opposite a very large walnut tree on landside edge of widened levee crown

Site F (~Levee Mile 4.9) – 1 trench opposite a cluster of ~12 inch sycamore trees about 6 to 8 feet below waterside levee crown

Site O (~Levee Mile 6.4) – 1 trench opposite a large cottonwood tree on landside slope about 25 feet from levee centerline and about 3 feet below levee crown

Site B (~Levee Mile 5.6) – 1 trench opposite a ~2-foot-diameter oak tree on landside slope about 3 feet below levee crown

Site B (~Levee Mile 5.6) – 1 trench opposite a second ~2-foot-diameter oak tree on landside slope about 3 feet below levee crown

Site G (~Levee Mile 4.8) – 1 trench opposite a ~30-inch-diameter walnut tree on landside slope about 2 to 4 feet below levee crown

Site G (~Levee Mile 4.8) – 1 trench opposite a second ~30-inch-diameter walnut tree on landside slope about 2 to 4 feet below levee crown

Site D (~Levee Mile 5.3) – 1 trench opposite large sycamore trees on landside slope about 4 to 6 feet below levee crown

Site K (~Levee Mile 2.5) – 1 trench opposite a large oak tree on waterside edge of widened levee crown

Site K (~Levee Mile 2.5) – 1 trench opposite a second large oak tree on waterside edge of widened levee crown

Pocket Area Tree Root Architecture Study Site

Site G (~Levee Mile 4.8) – 1 decomposing walnut stump (~ 12-inch-diameter) on landside slope about 5 feet below levee crown;
1 valley oak on waterside slope (approx. 12 inch diameter)